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RINGNECK DUCK.—Mr. G. A. Boardman of Calais, Me., writes that he found several flocks of the Ringneck Duck, *Fulix collaris*, breeding on the river, near Calais, the past season, and that he secured the old and "chicks." He states that he knows of no other instance of this duck breeding in New England.

MOCKING BIRD IN MAINE.—I found a mocking bird, *Mimus polyglottus*, in the woods up the river this past season. This is the first time the bird has been found in Maine, to my knowledge, and I think it could not have been an escaped cage bird.—G. A. BOARDMAN, *Calais*, *Maine*.

RED SQUIRRELS NOT RED.—I received in November last a very pretty black specimen of the *Sciurus Hudsonius*, and also a pure white specimen of the same species.—G. A. BOARDMAN, *Calais*, *Maine*.

## GEOLOGY.

DEVONIAN ROCKS IN THE AMAZONIAN VALLEY.—At the foot of the celebrated Serra do Ereré, rechristened Monte do Agassiz by Dr. Silva Continho, in the Province of Grao Pará, Brazil, is an extensive plain on the northern side, composed of coarse shaly sandstones of a reddish color, red, white, and black shales, and very hard cherty beds, all lying quite horizontally, but broken through by a perfect network of heavy trap dykes, which appear on the surface of the plain like ruined walls. The sandstone beds contain fossils of which I secured a large collection. They comprise one or more species of *Dalmanites* of which I have fragments kindly determined for me by Professor James Hall, *Chonetes?*, *Spirifer*, *Leptocœlia*, *Orthisina*, *Orthis?*, *Lingula*, *Discina*, *Tentaculitz*, *etc.* In a *relatorio* published in the "Diario do Grao-Pará" of Pará, January 5th, 1871, I referred this series of beds to the Devonian. A small collection of the above fossils was referred to Professor Hall, who writes me that "the forms and associations are of Devonian character, and the impression produced from the *tout ensemble* is that they are of the age of the Upper Helderberg group."

We have now the Devonian age of the Ereré beds, I think, definitely settled, and it is interesting that these are the only Brazilian rocks that we can satisfactorily refer to that age.

These Devonian rocks, lying quite horizontally, reach close up to the base of the Serra do Ereré, and run along it for some distance. The Serra is composed of heavy beds of coarse sandstone, with a slight admixture of feldspathic clay, and so exceedingly compact that a fracture passes through the grains of sand. This is the general character of the rock; some is not so compact, and there are one or two comparatively thin beds of hardened feldspathic clay. The rock is without fossils. The whole series dips towards the southeast approximately, the angle being in some cases as high as 15°–20.° I studied this locality for a month, and I came away with the only conclusion that seemed legitimate, viz.: that the Serra was older than the Devonian rocks of the plain to the north. It is not a table-topped Serra, and does not belong to the same system as the table-topped hills of Almeirim, Paraúquára and Santarem, which I believe to be Tertiary. The group of hills of Ereré and Paitúna, is entirely different from anything else I have seen on the Amazonas, and it seems quite unique.

I did not find the geological structure of the Amazonian valley as simple as I expected. Along the line of the main river it is very monotonous. So it is along the lower Mississippi, but the valley is bordered by older rocks, Eozoic, Silurian?, Devonian and Carboniferous. Nor are the clays, etc., so uniform in their distribution as I expected to find them. I have seen clays from the Devonian, Carboniferous and Tertiary so exactly alike that it would be impossible to distinguish them, in the hand specimen, from the recent clays.

I am preparing a report on my geological studies on the Amazonas, which I shall publish as soon as possible. — CH. FRED. HARTT, *Jan. 17th*, 1871.

ORIGIN OF DIAMONDS. — Professor Morris has started a new theory as to the source whence diamonds are derived. Hitherto they have been looked upon as coming from igneous and metamorphic rocks, like garnets, rubies, and many other precious stones; a better knowledge of the geology of the diamond district of South Africa, leads us to conclude that these stones come from certain stratified beds containing, besides reptilian remains, numerous plants and much fossil wood. These beds are known as the "Karoo" or *Dicynodon* beds. Professor Morris calls to mind the remarkable fact (well known to botanists and mineralogists) that in the stems of the bamboo small crystals of quartz are found, known by the name of *tabasheer;* he suggests, whether it may not be possible that the diamonds yielded by these old plant beds similarly owe their origin to vegetable growth. The idea is well worthy the attention alike of the chemist, the mineralogist and the botanist. — *The Academy.*

DISCOVERY OF ACTUAL GLACIERS ON THE ROCKY MOUNTAINS.—Mr. Clarence King announces in the March number of the "American Journal of Science and Arts," the fact that while "extinct glaciers, equalling in all respects the former grandeur of the alpine system," were discovered by Prof. Whitney and his corps, there are still in existence glaciers on the northern side of Mt. Shasta in Northern California, "the largest about four and a half miles in length, and two to three miles wide." Glaciers have also been found by Mr. Emmons on Mt. Tachoma, or Rainier, and on Mt. Hood by Mr. Hague. On the former mountain (Rainier): —

> "The main White River glacier, the grandest of the whole, pours straight down from the rim of the crater in a northeasterly direction, and pushes its extremity farther out into the valley than any of the others. Its greatest width on the steep slope of the mountain must be four or five miles, narrowing towards its extremity to about a mile and a half; its length can be scarcely less than ten miles. The great eroding power of glacial ice is strikingly illustrated in this glacier, which seems to have cut down and carried away on the northeastern side of the mountain, fully a third of its mass. The thickness of rock cut away, as shown by the walls on either side, and the isolated peak at the head of the triangular spur, in which the bedding of the successive flows of lava forming the original mountain crust, is very regular and conformable, may be roughly estimated at somewhat over a mile. Of the thickness of the ice of the glacier, I have no data for making estimates, though it may probably be reckoned in thousands of feet."

EOZOON CANADENSE. — Some doubts having been thrown on the organic origin of this oldest known geological form of life by a correspondent in "Nature," Dr. Carpenter has been induced to recapitulate the arguments in favor of the organic theory; and has also brought from Principal Dawson of Montreal, in "Nature" for February 9th, an account of recent explorations and observations in the Laurentian rocks of Canada, which seems fully to establish the claims of *Eozoon* to the character of a veritable fossil. — A. W. B.

The Bottom of the Sea off the Eastern United States.— At the meeting of the Boston Society of Natural History, Nov. 16, the President introduced Count L. F. de Pourtales, who spoke on the constitution of the bottom of the ocean off the east coast of the United States, south of Cape Hatteras, as developed by the soundings and dredgings of the United States Coast Survey.

The chief constituent, he said, is silicious sand, from the coast line to about the one hundred fathom line, a limit which also coincides nearly with the inner edge of the gulf stream for a great portion of its course. Outside of this line the whitish, calcareous "Globigerina" mud prevails and extends probably under the greater part of the ocean. The silicious sand is replaced to the southward of the Vineyard Islands, and off the eastern end of Long Island, by a greenish or bluish mud, known by the navigators as the Block Island soundings. Similar mud is found off Sandy Hook in a range of depressions known as the mud-holes, which form a leading mark to find the port of New York in thick weather. In the neighborhood of New York a few rocky patches are found which require investigation. Near Cape Fear, also, rocky bottom is sparingly found, affording a foothold to some corals, gorgonias and sponges. Otherwise the sand is pretty uniform in constitution, varying only in the size of the grain.

A remarkable deposit of green-sand is found on the inner edge of the Gulf Stream, off the coast of Georgia and South Carolina. The bottom consists here chiefly of living and dead foraminiferæ, the chambers of the latter becoming filled with a silicate which injects even the finest ramifications of the canals of the shell. At first yellow, it gradually turns green, at the same time the shell proper decays and breaks off, leaving a cast, which by attrition and conglomeration with others often loses the characteristic form of a cast. Sometimes black pebbles are found, of which a section shows plainly the origin due to an agglomeration of casts of foraminiferæ.

The dredgings made by the Coast Survey in the Straits of Florida have revealed the existence of a large bank, or deep sea platform off the Florida Reef, consisting of a highly fossiliferous limestone still in process of formation from the numerous shells, echinoderms and corals, mostly new to science, which live on it, at a depth of from one hundred to three hundred fathoms. Between this platform and the reef, the bottom consists of the detritus of the reef, more or less finely comminuted and not rich in animal life. In depths beyond the three hundred fathom line, but with considerable variation in its limits, we find again the Globigerina mud which also fills the greater part of the Gulf of Mexico in deep water.

The Coast Survey intends to prosecute these researches next year with increased means.

FOSSIL WHALE IN THE DRIFT. — The bones of a whale closely allied to the White Whale (*Beluga leucas*) of the Gulf of St. Lawrence, have been discovered at Cornwall, Ontario County, Canada. It seems to be the same as the *B. Vermontana* of Thompson.—*Nature.*

## MICROSCOPY.

PHOTO-MICROGRAPHS FOR THE STEREOSCOPE.* — Before the suggestion in Carpenter's last edition on the Microscope, that stereoscopic pictures might be obtained by photographing a microscopic object alternately with the two sides of an objective, I had been working on the subject with some degree of success. Dr. Carpenter, however, seems to mention the fact rather as a means of convenient illustration, or a scientific curiosity, than as the expedient of great practical utility that I conceive it to be.

Two or three methods seem to be applicable to the production of such pictures. Some objects, somewhat equal in width and depth, and visible under a lens of long focus, may be tilted by a simple, graduated, and carefully centred mechanical arrangement, first toward one side, and then equally toward the other, photographing each aspect by the same power and under essentially the same conditions: or, of certain objects under low and medium powers, a conception of solidity may be gained, by using photographs which are identical, except that, by a slight change of focus, they represent different planes of the object: or, the object and lens remaining unchanged, the lateral halves of the objective may be alternately stopped off, either directly, or by means of stops under the achromatic condenser, or by means of an achromatic condenser (of very small angular aperture) inclined first toward

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*From remarks by Dr. R. H. Ward, at a meeting of the Troy (N. Y.) Scientific Association, Feb. 20th, 1871.